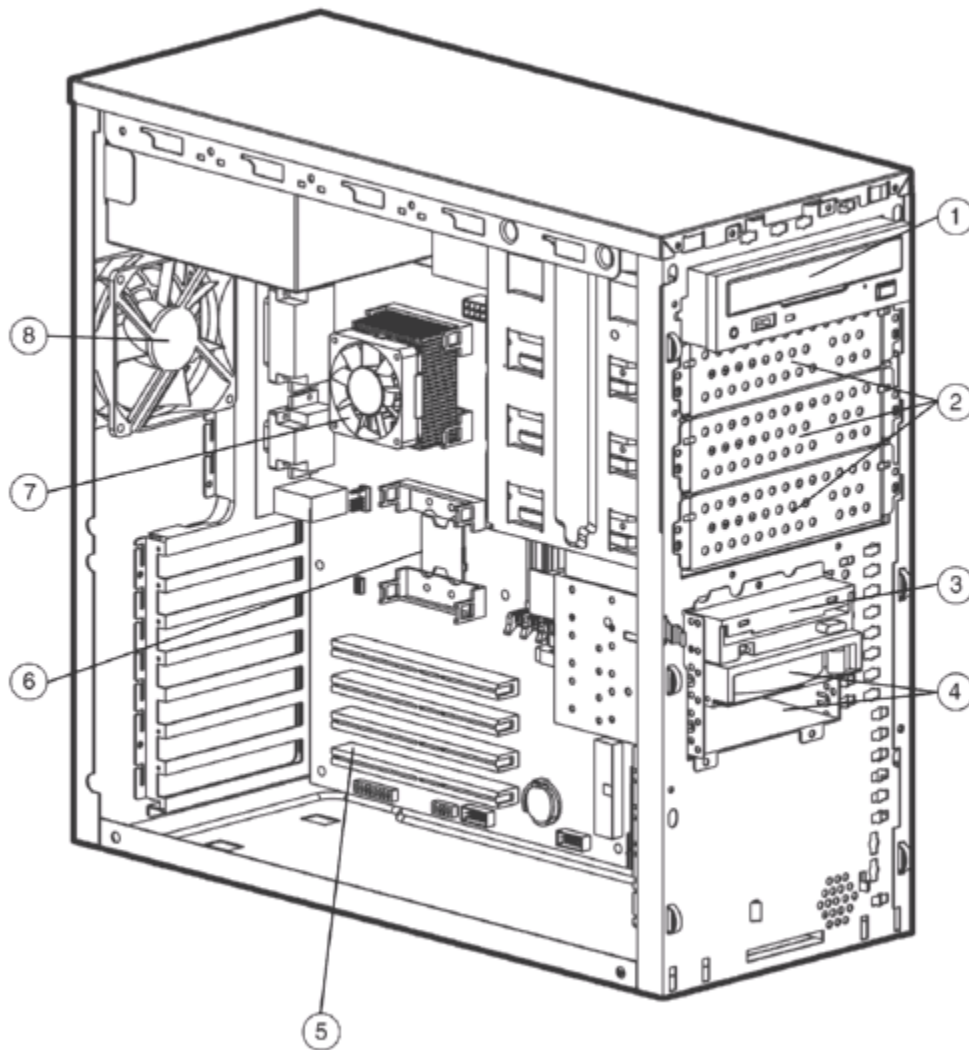


Overview



1. 48x IDE (ATAPI) CD-ROM
2. Removable Media Bays (1.6" each)
3. 1.44 MB Diskette Drive
4. Two 1" Non-hot plug Hard Drive Bays

5. Four 64-bit/33MHz PCI
6. Processor socket 2 (unpopulated)
7. Processor 1 (populated)
8. System Fan

What's New

- Supports up to 2 Intel® Xeon® 3.06 GHz or 2.8 GHz processors

Overview

At A Glance

- Two USB ports
- ROM Based Setup Utility (RBSU) and PXE support
- ServerWorks GC-SL Chipset with 533-MHz Front Side Bus
- 512-KB second level ECC cache standard (full speed)
- 256-MB PC2100 ECC DDR SDRAM Memory, expandable to 4 GB
- Four total I/O slots; three available in SCSI models
- 64-Bit/33MHz, 3.3v PCI
- NC7760 PCI Gigabit Server Adapter (embedded)
- Integrated Dual Channel Ultra ATA/100 Adapter with Integrated ATA RAID 0, 1, & 1+0 (ATA Models) or Integrated Single Channel Wide Ultra3 SCSI Adapter in a PCI slot (SCSI Models)
- Support for up to five 1" Ultra320 non-hot-plug SCSI hard drives or four 1" ATA non-hot-plug drives (model dependent)
- SCSI Models (with optional drive cage): Internal storage capacity of up to 1.040 TB (3 x 146.8 GB non-hot-plug + 2 x 300 GB hot plug 1" hard drives)
- ATA Models: Internal storage capacity of up to 640 GB (4 x 160-GB ATA/100 drives)
- Integrated ATI Rage XL with 8MB SDRAM video
- 300W Power Supply
- Systems Insight Manager, SmartStart and Automatic Server Recovery-2 (ASR-2)
- Protected by HP Services, including a one-year, limited warranty, Next Business Day 1 year on-site limited Global warranty and Pre-Failure Warranty, which covers processors, memory, and hard drives - Certain restrictions and exclusions apply.

Standard Features

Processor	Intel Xeon Processor 3.06 GHz/533-512KB (Supports up to 2 processors)		
One of the following depending on Model	Intel Xeon Processor 2.8 GHz/533-512KB (Supports up to 2 processors)		
Cache Memory	Integrated 512-KB Level 2 ECC cache (full speed)		
Chipset	ServerWorks Grand Champion SL Chipset with 533-MHz Front Side Bus NOTE: For more information regarding ServerWorks, please see the following URL: http://www.serverworks.com/products/overview.html .		
Memory Protection	Advanced ECC capabilities		
Memory	Type	PC2100 DDR SDRAM running at 266MHz	
	Standard	256 MB (1 x 256 MB)	
	Maximum	4 GB	
Network Controller	NC7760 PCI Gigabit Server Adapter (embedded)		
Expansion Slots	I/O	Number of slots	PCI Voltage:
	64-bit/33MHz PCI	4	3.3 volts
Storage Controller	Integrated Single Channel Wide Ultra3 SCSI Adapter in a PCI slot (SCSI Models only) Integrated Dual Channel Ultra ATA 100 IDE Adapter with Integrated ATA RAID 0, 1, & 1+0 (ATA Models)		
Storage	Diskette Drives	1.44 MB Diskette Drive	
	Optical Drive	48x IDE CD-ROM Drive	
	Hard Drives	One of the following: (1) 36.4 GB Ultra320 SCSI Drive (SCSI Models only) (1) 40 GB ATA/100 7200 rpm 1" Drive (ATA Models only)	
Maximum Internal Storage	SCSI (Non-Hot Plug and Hot Plug)	1.04 TB	3 x 146.8 GB non-hot-plug + 2 x 300 GB hot plug Ultra 320 with optional drive cage
	ATA	640 GB	4 x 160.0 GB ATA (internal drive bays and removable media bays)

Standard Features

Interfaces	Parallel	1
	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	USB	2
	NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html .	
	Network RJ-45 (Ethernet)	1
<hr/>		
Graphics	Integrated ATI RAGE XL Video Controller with 8MB SDRAM Video Memory	
<hr/>		
Form Factor	Tower (5U) Tower to Rack Enabling Option Kit available (PN 238547-B22)	
<hr/>		
ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) helps maximize system uptime and performance and reduce system maintenance costs by providing proactive notification of problems before those problems result in unplanned downtime or reduced productivity. For more information on HP SIM, visit http://www.hp.com/go/hpsim .
	SmartStart	SmartStart simplifies server setup by providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart . Minimum SmartStart version supported: SmartStart 6.4. Latest SmartStart version supported: SmartStart 7.2
	Management Agents	The Management Agents provide direct, browser-based access to in-depth instrumentation built into HP servers, workstations, desktops, or portables, and send alerts to Systems Insight Manager or other enterprise management applications in case of subsystem or environmental failures. For additional information about the Management Agents and other management products from HP, visit http://www.hp.com/servers/manage .
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive alerts on updates as they become available.
	ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options Available in SmartStart or downloadable from the Software and Drivers download pages at http://www.hp.com/go/support .
	Survey Utility and diagnostics utilities	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP at your fingertips Available in SmartStart.



Standard Features

Optional ProLiant Essentials Value Packs	Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs: <ul style="list-style-type: none">• Rapid Deployment Pack – an automated solution for multi-server deployment and provisioning, enabling companies to quickly and easily adapt to changing business demands.• Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.• Performance Management Pack – a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.• Intelligent Networking Pack - detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions.• Vulnerability and Patch Management Pack - identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats• Virtual Machine Management Pack - provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console.
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NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>

Industry Standard Compliance	ACPI V1.0b Compliant PCI 2.2 Compliant PXE Support WOL Support Microsoft® Logo certifications
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Intelligent Manageability	HP Systems Insight Manager Redundant ROM Remote Flash ROM Automatic Server Recovery-2 (ASR-2) Remote Insight Lights-Out Edition II (optional) Drive Parameter Tracking (with Smart Array Controller) Dynamic Sector Repairing (with Smart Array Controller) Pre-Failure Warranty (covers processors, memory and hard drives)
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Security	Power-on password Setup password Diskette boot control Power switch security
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Standard Features

Server Power Cords	One Lowline power cord ships standard
Power Supply	300 Watts, PFC (Power Factor Correcting)
System Fans	1 system fan ships standard. 1 system fan total supported (does not include fans integral to CPU heatsink or power supply assemblies).
Required Cabling	For required cabling information, refer to the HP Web site at http://h18000.www1.hp.com/products/servers/ProLiantML330/ .
OS Support	<p>Microsoft Windows 2000 (Server and Advanced Server) Microsoft Small Business Server 2000 Microsoft Small Business Server 2003 Windows Server 2003 Novell NetWare Novell NetWare Small Business Server 6.0 Linux (Red Hat, SuSE, UnitedLinux)</p> <p>NOTE: For a more complete and up-to-date listing of supported OS's and versions, please visit our OS Support Matrix at: http://h10018.www1.hp.com/wwsolutions/index.html NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at: http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant ML330, please see: http://h18023.www1.hp.com/support/files/server/us/index.html. NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html</p>
Rack Airflow Requirements	<p>Rack 10000 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.</p> <p>CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:</p> <ul style="list-style-type: none"> ○ <u>Front and rear doors:</u> If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). ○ <u>Side:</u> The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). <p>CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.</p> <p>NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/ProLiantml330/index.html.</p>

Standard Features

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA3000 & EVA5000, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to <http://www.hp.com/go/factory-express>

Service and Support

One-year limited warranty, including hardware diagnostic support, and pre-failure warranty (coverage of hard drives, memory and processors). The warranty is fully supported by HP Services and a worldwide network of resellers and service providers. An additional 90-day getting started software telephone support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services.

NOTE: Limited warranty includes 1 year parts, 1 year labor, 1-year on-site support.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at:

<http://www.hp.com/hps/carepack>

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: <http://www.hp.com/hps>

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Models

ML330T03 X3.06-512KB/533 256MB, 40GB, ATA 353448-xx2	Processor	(1) Intel Xeon 3.06 GHz Processor standard
	Cache Memory	Integrated 512-KB Level 2 cache (full speed)
	Memory	256 MB
	Network Controller	NC7760 PCI Gigabit Server Adapter (embedded)
	Storage Controller	Integrated Dual Channel Ultra ATA-100 IDE Adapter with Integrated ATA RAID 0, 1, 1+0
	Hard Drive	40 GB Ultra ATA/100
	Internal Storage	640 GB maximum (with optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Kit available)
ML330T03 X2.80-512KB/533 256MB, 40GB, ATA 317817-xx2	Processor	(1) Intel Xeon 2.80 GHz Processor standard
	Cache Memory	Integrated 512-KB Level 2 cache (full speed)
	Memory	256 MB
	Network Controller	NC7760 PCI Gigabit Server Adapter (embedded)
	Storage Controller	Integrated Dual Channel Ultra ATA-100 IDE Adapter with Integrated ATA RAID 0, 1, 1+0
	Hard Drive	40 GB Ultra ATA/100
	Internal Storage	640 GB maximum (with optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Kit available)
ML330T03 P3.06-512KB/533 256MB, 36GB, SCSI 353093-xx2	Processor	(1) Intel Xeon 3.06 GHz Processor standard
	Cache Memory	Integrated 512-KB Level 2 cache (full speed)
	Memory	256 MB
	Network Controller	NC7760 PCI Gigabit Server Adapter (embedded)
	Storage Controller	Integrated Single Channel Ultra3 SCSI Adapter in a PCI slot
	Hard Drive	(1) 36.4 GB Ultra320 SCSI
	Internal Storage	512 GB maximum (with optional hot plug drive cage and optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Kit available)

Models

ML330T03 P2.8-512KB/533 256MB, 36GB, SCSI 317821-xx2	Processor	(1) Intel Xeon 2.8 GHz Processor standard
	Cache Memory	Integrated 512-KB Level 2 cache (full speed)
	Memory	256 MB
	Network Controller	NC7760 PCI Gigabit Server Adapter (embedded)
	Storage Controller	Integrated Single Channel Ultra3 SCSI Adapter in a PCI slot
	Hard Drive	(1) 36.4 GB Ultra320 SCSI
	Internal Storage	512 GB maximum (with optional hot plug drive cage and optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Kit available)

Country Code Key	XX=00	NA
	XX=01	Australia
	XX=03	UK
	XX=04	Germany
	XX=05	France
	XX=20	Brazil
	XX=29	Japan
	XX=34	Austria
	XX=37	AP
	XX=42	Euro
	XX=AA	PRC

Options

ProLiant Essentials Value Pack Software	Rapid Deployment Pack, 1 User, V1.x	267196-B21
	NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 1 User, V1.x (Japan)	267196-291
	NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 10 Users, V1.x	269817-B21
	NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 10 Users, V1.x (Japan)	269817-291
	NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	
	Flexible Quantity License Kit	302127-B21
	License-Only - for use with a Master License Agreement	302128-B21
	ProLiant Essentials Workload Management Pack 2.0 (Featuring Compaq Resource Partitioning Manager version 2.0)	303284-B21
	ProLiant Essentials Recovery Server Option Pack	280189-B21
	Performance Management Pack, single server	306696-B21
	NOTE: This license allows 1 server to be managed by Performance Management Pack.	
	Performance Management Pack, 10 Pack Server License	374055-B21
	ProLiant Essentials Performance Management Pack Flexible License	306697-B21
	NOTE: A single pack is shipped with a single license key for the total number of licenses ordered	
	ProLiant Essentials Intelligent Networking Pack, 1 License	372906-B21
	ProLiant Essentials Intelligent Networking Pack Flex License	372950-B21
	ProLiant Essentials Intelligent Networking Pack Track License	372951-B21
	ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License	371645-B21
	ProLiant Essentials Vulnerability and Patch Management Pack, 10-Server License	372029-B21
	ProLiant Essentials Vulnerability and Patch Management Pack, Flexible-Quantity License	371646-B21
	ProLiant Essentials Vulnerability and Patch Management Pack, Tracking license for new servers	371647-B21
	ProLiant Essentials Vulnerability and Patch Management Pack, Tracking license for installed servers	378372-B21
	ProLiant Essentials Vulnerability and Patch Management Pack, 1-Server 10-Desktop Bundle License	389941-B21
	NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.	
	NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials .	

Software	HP digital asset protection	302316-001
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Options

Processors	Intel Xeon 3.06 GHz-512KB Processor Option Kit	354606-B21
	NOTE: The Intel Xeon 3.06 GHz-512KB Processor Option Kit is supported by the ProLiant ML330 G3 servers only.	
	Intel Xeon 2.80 GHz-512KB Processor Option Kit	317823-B21
	NOTE: The Intel Xeon 2.80 GHz-512KB Processor Option Kit is supported by the ProLiant ML330 G3 servers only.	
	Intel Xeon 2.40 GHz-512KB Processor Option Kit	323139-B21
	NOTE: The Intel Xeon 2.40 GHz-512KB Processor Option Kit is supported by the ProLiant ML330 G3 servers only.	
Memory (DIMMs)	128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB)	287494-B21
	256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	287495-B21
	512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	287496-B21
	1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	287497-B21
Optical Drives	16X DVD-ROM Drive Option Kit (Carbon)	217053-B21
	CD-RW/DVD ROM Combo Drive Option Kit	331346-B21
	NOTE: The DVD-ROM drive is supported in the CD-ROM bay and in the removable media bay. If placed in the removable media bay, it requires the 2-Device IDE cable (PN 305381-B21).	
	HP DVD+R/RW 16X Half Height	383974-B21
Internal Storage	ML3xx Two Bay Hot Plug SCSI Drive Cage	244059-B21
	NOTE: The drive cage option kit (PN 244059-B21) has one 1" drive bay and one 1.6" drive bay. It installs in two removable media bays.	
Hard Drives	Ultra320 SCSI – Universal Hot Plug	
	NOTE: These Hot Plug Drives are for use in conjunction with the ML3xx Two Bay Hot Plug SCSI Drive Cage (PN 244059-B21).	
	300-GB 10,000 rpm U320 Universal Hard Drive (1")	350964-B22
	146.8-GB 10,000 rpm U320 Universal Hard Drive (1")	286716-B22
	72.8-GB 10,000 rpm U320 Universal Hard Drive (1")	286714-B22
	146.8-GB 15,000 rpm Ultra320 Universal Hard Drive (1")	347708-B22
	72.8-GB 15,000 rpm U320 Universal Hard Drive (1")	286778-B22
	36.4-GB 15,000 rpm U320 Universal Hard Drive (1")	286776-B22
	Ultra320 SCSI – Non-Hot Plug	
	146.8-GB 10,000 rpm, U320 Non-Hot Plug Hard Drive, 1"	356990-B21
	72-GB 10,000 rpm, U320 Non-Hot Plug Hard Drive, 1"	332751-B21
	36-GB 15,000 rpm, U320 Non-Hot Plug Hard Drive, 1"	357012-B21
	NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.	
	ATA 100 - Non-Hot Plug	
	160-GB ATA 100 7,200 rpm Hard Drive (1")	366486-B21
	80-GB ATA 100 7,200 rpm Hard Drive (1")	278424-B21
	40-GB ATA 100 7,200 rpm Hard Drive (1")	230534-B21
	NOTE: Please see the Hard Drive QuickSpecs for Technical Specifications such	



Options

as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

U320 Hard Drive QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/11531_div/11531_div.HTML
(Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11531_na/11531_na.HTML
(North America)

ATA100 Hard Drive QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/11361_div/11361_div.HTML
(Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11361_na/11361_na.HTML
(North America)

Storage Controllers –
SCSI Drives

NOTE: The following Storage Controllers are qualified for SCSI drives only.

Smart Array 6402/128 Controller 273915-B21

Smart Array 641 Controller 291966-B21

Smart Array 642 Controller 291967-B21

Smart Array 6404/256 Controller 273914-B21

128MB Battery-Backed Cache Enabler 351580-B21

NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.

128-MB Cache Module for Smart Array 5302 Controller 153506-B21

256-MB Battery-Back Cache Module 254786-B21

NOTE: This 256-MB Battery-Backed Cache Module supports the Smart Array 5300 series controllers, HP StorageWorks Modular Smart Array 1000 and the HP StorageWorks Modular Smart Array 500.

256MB Battery-Backed Cache Upgrade Kit for SA-6400 273913-B21

NOTE: This 256-MB Battery-Backed Cache upgrade kit supports the Smart Array 6400 series controller only.

64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 268351-B21

Ultra320 Expansion Module for SA-6402 273911-B21

64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 284688-B21

NOTE: Please see the following Controller or SCSI Adapter QuickSpecs for Technical Specifications such as PCI Bus, PCI Peak Data Transfer Rate, SCSI Protocols supported, SCSI Peak Data Transfer Rate, Channels, SCSI Ports, Drives supported, Cache, RAID support, and additional information:

http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML
(Smart Array 6400 Series)

http://h18000.www1.hp.com/products/quickspecs/12067_div/12067_div.HTML
(Smart Array 641)

http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML
(Smart Array 642)

http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.HTML
(SCSI Adapter)

http://h18000.www1.hp.com/products/quickspecs/11555_div/11555_div.HTML
(U320 Adapter)

Options

Communications	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	NC6770 PCI-X Gigabit Server Adapter, 1000-SX	244949-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	NOTE: Any NC61XX, or NC71XX NIC can be used for redundancy with the embedded NC7760 Network Controller.	
	HP High-speed PCI soft modem	DC132D

Management Options	Remote Insight Lights-Out Edition II (NA, LA)	227251-001
	Remote Insight Lights-Out Edition II (EMEA)	227251-021
	Remote Insight Lights-Out Edition II (ROW)	227251-371

Tape Drives

NOTE: In order to install certain tape drives internally, you may need to remove the rails that come standard on the drives and then re-insert the screws in the mounting holes. Mounting screws are shipped standard with server.

NOTE: To run external SCSI-based devices, either an Internal-to-External SCSI Cable Option kit (for SCSI models) or a SCSI controller with external channel (for ATA models) must be purchased.

Review the server cabling matrix for additional information on cables required to connect backup products to the server.

Ultrium Tape Drives - External, Rack-Mount and Array

HP StorageWorks Ultrium 215 Tape Drive, External (Carbon)	Q1545A
HP StorageWorks Ultrium 215 rack-mount (Carbon) - Single drive installed in a 1U rack-mount kit	A7444A
HP StorageWorks Ultrium 215 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7492B
HP StorageWorks Ultrium 230 Tape Drive, External (Carbon)	Q1517A
HP StorageWorks Ultrium 230, Rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350545-B21
HP StorageWorks Ultrium 230 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7470B
HP StorageWorks Ultrium 448 Tape Drive, External (Carbonite)	DW017A
HP StorageWorks Ultrium 448, Rack-mount (Carbonite) - Single drive installed in a 1U rack-mount kit	DW028A
HP StorageWorks Ultrium 448 Tape Drive, Internal (Carbonite)	DW016A
HP StorageWorks Ultrium 460 Tape Drive, External (Carbon)	Q1520A
HP StorageWorks Ultrium 460, Rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350546-B21
HP StorageWorks Ultrium 460 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	Q1512B
HP StorageWorks Ultrium 960 Tape Drive, External (Carbonite)	Q1539A
HP StorageWorks Ultrium 960 Rack-mount (Carbonite) - Single drive installed in a 3U rack-mount kit	Q1595A

NOTE: Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:
http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html
 (Worldwide)

Options

http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html
(North America)
http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html
(Worldwide)
http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html
(North America)

For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <http://www.hp.com/go/connect>

DAT Drives - External, Rack-Mount and Array Module

NOTE: Use of a hot plug tape drives requires installation of the optional two-bay SCSI drive cage.

HP StorageWorks DAT 72 Tape Drive, External (Carbon)	Q1523A
HP StorageWorks DAT 72 Tape Drive, Internal (Carbon)	Q1522A
HP StorageWorks DAT 72 Tape Drive, Internal Hot-Plug (Carbon)	Q1529A
HP StorageWorks DAT 72 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	Q1524B
HP StorageWorks DAT 40 Tape Drive, External (Carbon)	C5687C
HP StorageWorks DAT 40 Tape Drive, Internal (Carbon)	C5686B
HP StorageWorks DAT 40 Tape Drive, Internal Hot-Plug (Carbon)	Q1546A
HP StorageWorks DAT 40 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7497B

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:

http://h18000.www1.hp.com/products/quickspecs/11883_div/11883_div.HTML
(Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML
(North America)

For an up-to-date listing of the latest O/S and software support details for HP DAT drives, please visit: <http://www.hp.com/go/connect>

Internal and External DLT VS Tape Drives

HP StorageWorks DLT VS80 Tape Drive, Internal (Carbon) WW	337699-B21
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) NA	337699-B22
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) Int'l	337699-B31
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) Japan	337699-291
DLT VS160, Internal, Worldwide (Carbon)	A7569A
DLT VS160, External, North America (Carbon)	A7570A
DLT VS160, External, International (Carbon)	A7571A

NOTE: Please see the DLT VS Tape Drive QuickSpecs for additional options such as host bus adapters, controllers, media, and other options:

http://h18006.www1.hp.com/products/quickspecs/11403_div/11403_div.HTML
(Worldwide)
http://h18006.www1.hp.com/products/quickspecs/11403_na/11403_na.HTML
(North America)

For an up-to-date listing of the latest O/S and software support details for the DLT VS80, please visit: <http://www.hp.com/go/connect>

External and Rack-mount SDLT Tape Drives

HP StorageWorks SDLT 320 Tape Drive, External (Carbon) NA	257319-001
HP StorageWorks SDLT 320 Tape Drive, External (Carbon) Int'l	257319-B31
HP StorageWorks SDLT 320 Tape Drive, External (Carbon) Japan	257319-291

NOTE: Please see the SDLT 320 Tape Drive QuickSpecs for additional options such as adapters, controllers, and media.

http://h18006.www1.hp.com/products/quickspecs/11840_div/11840_div.HTML



Options

(Worldwide)	
http://h18006.www1.hp.com/products/quickspecs/11840_na/11840_na.HTML	
(North America)	
For an up-to-date listing of the latest O/S and software support details for HP SDLT tape drives, please visit: http://www.hp.com/go/connect	
Rack-Mount Tape Drive Enclosures	
HP StorageWorks 1U Rack-Mount Kit	A7445A
NOTE: The 1U Rack-mount Kit can support up to 2 half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including DAT 24, DAT40, DAT72, DLT VS 80, and Ultrium 215 tape drives.	
HP StorageWorks 3U Rack-Mount Kit	274338-B21
NOTE: The 3U Rack-Mount Kit can support up to 2 full-height or 4 half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including DAT, DLT VS80, SDLT 320, Ultrium 215, Ultrium 230, and Ultrium 460 Tape Drives.	
HP StorageWorks 5U Rack-Mount Kit	274339-B21
NOTE: The 5U Rack-Mount Kit can support up to 4 full-height tape drives and is compatible with SDLT 320, Ultrium 230, and Ultrium 460 tape drives.	
NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:	
http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.HTML	
(Worldwide)	
http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML	
(North America)	
HP StorageWorks Tape Array 5300	C7508A
NOTE: The Tape Array 5300 is a 3U enclosure that supports up to 2 full-height or 4 half-height hot-swap array modules, including DAT and Ultrium tape drives. Cables and terminators are not included and must be ordered separately.	
NOTE: Please see the Tape Array 5300 QuickSpecs for additional information regarding this product.	
http://h18000.www1.hp.com/products/quickspecs/11878_div/11878_div.HTML	
(Worldwide)	
http://h18000.www1.hp.com/products/quickspecs/11878_na/11878_na.HTML	
(North America)	
Accessories for 3U & 5U Rack-mount Tape Drive Kits	
LVD Cable Kit, VHDCI/HD68	168048-B21
NOTE: For use with the 3U Rack-mount Kit and 5U Rack-mount Kit only.	
LVD Cable Kit, HD68/HD68	242381-B21
NOTE: For use with the 3U Rack-mount Kit and 5U Rack-mount Kit only.	
Accessories for 3U & 5U Rack-mount Tape Drive Kits	
PSU/Fan Upgrade Kit - Redundant hot-swap power supply unit and fan for Tape Array 5300.	
68-pin HD multi-mode terminator	C2364A
1.0m 68-pin VHDCI to 68-pin HD cable	C2361B
2.5m 68-pin VHDCI to 68-pin HD cable	C2362B
10.0m 68-pin VHDCI to 68-pin HD cable	C2363B
0.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2978B
1.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2979B
0.9m 68-pin HDI to 68-pin HD cable LVD/SE	C2911C
2.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2924C
NOTE: For use with Tape Array 5300 only	

Options

Tape Autoloaders

DAT Autoloader

HP StorageWorks DAT 72x6 Internal Autoloader	Q1566A
HP StorageWorks DAT 72x6 External Autoloader	Q1567A

NOTE: Please see the DAT Tape Autoloader QuickSpecs for additional options such as host bus adapters, controllers and media:

http://h18000.www1.hp.com/products/quickspecs/11985_div/11985_div.HTML
(Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11985_na/11985_na.HTML
(North America)

HP StorageWorks 1/8 Tape Autoloader

1/8 Ultrium 460 Tape Autoloader, Tabletop	AA927A
1/8 SDLT 320 Tape Autoloader, Tabletop	AA926A
1/8 Ultrium 230 Tape Autoloader, Tabletop	C9572CB
1/8 DLT VS80 Tape Autoloader, Tabletop	C9264CB
1/8 Tape Autoloader Rackmount Kit	C9268R

NOTE: Required to install the 1/8 tape autoloader in a standard 19-inch rack

NOTE: Please reference the 1/8 Tape Autoloader QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks SSL1016 Tape Autoloader

SSL1016 Ultrium 460 Tape Autoloader	330821-B21
SSL1016 SDLT 320 Tape Autoloader	330816-B21

Tape Libraries

HP StorageWorks MSL6000 Tape Library

Ultrium 960 technology

MSL6030, 1 drive, 30 slots, Ultrium 960	AD606A
MSL6030, 2 drive, 30 slots, Ultrium 960	AD607A
MSL6030, 1 drive, 30 slots, Ultrium 960, with embedded FC router	AD608A
MSL6030, 2 drive, 30 slots, Ultrium 960, with embedded FC router	AD609A
MSL6060, 2 drive, 60 slots, Ultrium 960	AD610A
MSL6060, 2 drive, 60 slots, Ultrium 960, with embedded FC router	AD611A

SDLT 600 technology

MSL6026, 1 drive, 26 slots, SDLT 600	AD582A
MSL6026, 2 drive, 26 slots, SDLT 600	AD583A
MSL6026, 1 drive, 26 slots, SDLT 600, with embedded FC router	AD584A
MSL6026, 2 drive, 26 slots, SDLT 600, with embedded FC router	AD585A
MSL6052, 2 drive, 52 slots, SDLT 600	AD587A
MSL6052, 2 drive, 52 slots, SDLT 600, with embedded FC router	AD588A

Ultrium 460 technology

MSL6030, 1 drive, 30 slots, Ultrium 460	AD598A
MSL6030, 2 drive, 30 slots, Ultrium 460	AD599A
MSL6030, 1 drive, 30 slots, Ultrium 460, with embedded FC router	AD600A
MSL6030, 2 drive, 30 slots, Ultrium 460, with embedded FC router	AD601A
MSL6060, 2 drive, 60 slot Ultrium 460	AD603A
MSL6060, 2 drive, 60 slot Ultrium 460, with embedded FC router	AD604A

Options

NOTE: Please reference the MSL6000 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks MSL5026S2 Tape Library

MSL5026S2, 1 drive, 26 slots, SDLT 320, RM	293472-B22
MSL5026S2, 2 drive, 26 slots, SDLT 320, RM	293472-B23
MSL5026S2, 1 drive, 26 slots, SDLT 320, RM with embedded FC router	293472-B24
MSL5026S2, 2 drive, 26 slots, SDLT 320, RM with embedded FC router	293472-B25

HP StorageWorks MSL5026S2 Tape Library

MSL5026S2, 1 drive, 26 slots, SDLT 320, RM	293472-B22
MSL5026S2, 2 drive, 26 slots, SDLT 320, RM	293472-B23
MSL5026S2, 1 drive, 26 slots, SDLT 320, RM with embedded FC router	293472-B24
MSL5026S2, 2 drive, 26 slots, SDLT 320, RM with embedded FC router	293472-B25

NOTE: Please reference the MSL5026S2 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks MSL5052S2 Tape Library

MSL5052S2, 2 drive, 52 slots, SDLT 320, RM	293474-B21
MSL5052S2, 2 drive, 52 slots, SDLT 320, RM with embedded FC router	293474-B24

NOTE: Please reference the MSL5052S2 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks MSL5030 Tape Library

MSL5030, 1 drive, 30 slots, Ultrium 230, RM	301897-B22
MSL5030, 2 drive, 30 slots, Ultrium 230, RM	301897-B23
MSL5030, 1 drive, 30 slots, Ultrium 230, RM with embedded FC router	301897-B24
MSL5030, 2 drive, 30 slots, Ultrium 230, RM with embedded FC router	301897-B25

NOTE: Please reference the MSL5030 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks MSL5060 Tape Library

MSL5060, 2 drive, 60 slots, Ultrium 230, RM	301899-B22
MSL5060, 2 drive, 60 slots, Ultrium 230, RM with embedded FC router	301899-B23

NOTE: Please reference the MSL5060 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks ESL E-Series Tape Libraries

ESL Extended 712e Tape Library, 0 drive, 712 LTO slots	AA934B
ESL Extended 630e Tape Library, 0 drive, 630 SDLT slots	AA935B
ESL Extended 322e Tape Library, 0 drive, 322 LTO slots	AA939B
ESL Extended 286e Tape Library, 0 drive, 286 SDLT slots	AA940B
ESL E-Series Ultrium 960 drive kit	AD595A
ESL E Ultrium 460 drive kit	AA937A
ESL E SDLT 320 drive kit	AA936A

Options

NOTE: Please reference the ESL E-Series Tape Libraries QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

Magneto-Optical Jukeboxes	HP StorageWorks 9.1 GB Entry-level Optical Storage	
	9100mx standalone drive	C1114M
	220mx, 1 drive, 24 slot jukebox	C1118M
	220mx, 2 drive, 24 slot jukebox	C1119M
	NOTE: Please reference the Magneto-Optical Jukebox data sheets at http://www.hp.com/go/optical for additional information needed to create a complete solution	
Ultra Density Optical Jukeboxes	HP StorageWorks Ultra Density Optical Storage	
	30ux standalone drive	AA961A
	700ux, 1 drive, 24 slot jukebox	AA962A
	700ux, 2 drive, 24 slot jukebox	AA963A
	1100ux, 2 drive, 38 slot jukebox	AA964A
	NOTE: Please reference the Magneto-Optical Jukebox data sheets at http://www.hp.com/go/optical for additional information needed to create a complete solution	
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2	335880-B21
	Modular Smart Array 500 High Availability Kit	351281-B21
	NOTE: includes Modular Smart Array 500 controller, 4-port IO Module, Smart Array Multipath Software and 2 SA-532 Adapters.	
	Modular Smart Array 500 Controller	218252-B21
	128-MB Cache Module for Smart Array Controller	153506-B21
	NOTE: 128-MB Cache Module for Smart Array Controller (PN 153506-B21) is an upgrade cache module (128 MB Standard) for Modular Smart Array 500 Controller	
	256-MB Battery-Backed Cache Module	254786-B21
	NOTE: Please see the Modular Smart Array 500 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11050_na/11050_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11050_div/11050_div.HTML (Worldwide)	

Options

External Storage – Tower & Rack	NOTE: To run any external SCSI-based devices, the customer needs to purchase an Internal to External Cable Option kit for SCSI models or a SCSI controller for ATA Models.	
	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies	
	HP StorageWorks Modular Smart Array 30 DB	302970-B21
	NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies	
	NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 1" Hot Plug Hard Drives.	
	StorageWorks Enclosure 4200 Redundant Power Supply Option	338296-B21
	StorageWorks Enclosure 4200 Ultra3 Single Bus I/O Module Option	190212-B21
	StorageWorks Enclosure 4200 Ultra3 Dual Bus I/O Module Option	190213-B21
	Redundant Power Supply 499W	338296-B21
HP StorageWorks Modular Smart Array 1000	StorageWorks Single Bus U320 I/O Module for MSA30	287484-B21
	StorageWorks Dual Bus U320 I/O Module for MSA30	287483-B21
	<hr/>	
	HP StorageWorks Modular Smart Array 1000	201723-B22
	NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML (North America)	
	http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)	
	<hr/>	
	UPS Power Cord Matrix Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units. ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf .	
	<hr/>	
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Uninterruptible Power Supply	HP T500 UPS, 120 V (US)	361475-001
	HP T750 UPS (NA, Japan)	378439-D71
	HP T750 UPS (Int'l)	378439-B31
	HP UPS Model T700 (700VA, 500 Watt), Low Voltage (NA)	204015-001
	HP UPS Model T700 (700VA, 500 Watt), High Voltage (Int'l)	204015-B31
	HP UPS Model T700 (700VA, 500 Watt), Low Voltage (Japan)	204015-291
	HP UPS Model T1000 XR (1000VA, 700 Watt), Low Voltage (NA)	204155-001
	HP UPS Model T1000 XR (1000VA, 700 Watt), High Voltage (Int'l)	204155-B31
	HP UPS Model T1000 XR (1000VA, 700 Watt), Low Voltage (Japan)	312803-291
	HP UPS Model T1500 XR (1440VA, 1050 Watt), Low Voltage (NA)	204155-002
	HP UPS Model T1500 XR (1440VA, 1050 Watt), Low Voltage (Int'l)	204155-B32
	HP UPS Model T1500 XR (1500VA, 1050 Watt), Low Voltage (JPN)	204155-291

Options

Uninterruptible Power Systems – Rack	HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage (NA/Jpn)	326529-D71
	HP UPS R5500 XR, (6000VA, 5400 Watt), High Voltage (Int'l)	326529-B31
	HP UPS R1500 XR (100 to 127) (NA)	204404-001
	HP UPS R1500 XR (208 to 480) (Int'l)	204404-B31
	HP UPS R1500 XR (100 to 127) (Japan)	204404-291
	HP UPS R3000 XR (120V) (NA)	192186-001
	HP UPS R3000 XR (208V) (NA)	192186-002
	HP UPS R3000 XR (100V) (Japan)	192186-291
	HP UPS R3000 XR (208V) (Japan) Compaq UPS R3000 XR (200V) (Japan)	192186-292
	HP UPS R3000 XR (230V) (Int'l - detachable cord)	192186-B31
	HP UPS R3000 XR (230V) (16A IEC309 Plug)	192186-B32
	HP UPS R3000 XR (230V) (16A CEE 7/7 SCHUKO Plug)	192186-B33
	HP UPS R3000 XR (230V) (16A BS-546 Plug)	192186-AR1
HP Power Distribution Unit with Power Monitoring	HP Power Distribution Unit with Power Monitoring Model S2324 - dual input, 3 phase, 24A (NA/JPN)	370959-D71
	HP Power Distribution Unit with Power Monitoring Model S1324 - single input, 3 phase, 24A (NA/JPN)	370960-D71
	HP Power Distribution Unit with Power Monitoring Model S2140 - dual input, 1 phase, 40A (NA/JPN)	370961-D71
	HP Power Distribution Unit with Power Monitoring Model S1140 - single input, 1 phase, 40A (NA/JPN)	370962-D71
	HP Power Distribution Unit with Power Monitoring Model S2316 - dual input, 3 phase, 16A (INTL)	370963-B31
	HP Power Distribution Unit with Power Monitoring Model S1316 - single input, 3 phase, 16A (INTL)	370964-B31
	HP Power Distribution Unit with Power Monitoring Model S2132 - dual input, 1 phase, 32A (INTL)	370965-B31
	HP Power Distribution Unit with Power Monitoring Model S1132 - single input, 1 phase, 32A (INTL)	370966-B31
Modular PDUs – 1U/0U (up to 32 outlets)	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan)	252663-D71
	NOTE: The above mPDU may also be used to connect to the low volt model of the UPS R3000 XR.	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	NOTE: L6-30 input.	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW)	252663-B21
	NOTE: The 40A model has a hardwired input.	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPSs R3000 XR and R6000.	
	HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord, (NA/JPN)	252663-D73



Options

	HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord, (Int'l)	252663-B32
	NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML (Worldwide)	
USB Options	USB Optical Scroll Mouse (Carbonite)	DD441B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
Rack Enabling Kit	ProLiant ML310/ML330 Rack Enabling Kit	238547-B22
	DL360 G2/G3 Telco Rack Option Kit	251243-B21
	NOTE: The DL360 Telco Rack Option Kit (251243-B21) interfaces with the ProLiant ML310/ML330 Rack Enabling Kit (PN 238547-B22) to support installation in a telco rack.	
Other	ProLiant ML310/ML330 G2 SCSI Cable Kit	273463-B21
	NOTE: This SCSI Cable Kit (PN 273463-B21) is required when installing an internal tape drive and a SCSI Controller.	
	ProLiant ML3xx Internal to External SCSI Cable Option Kit (HD68)	159547-B22
	ProLiant ML3xx Internal to External SCSI Cable Option Kit (VHDCI)	333370-B21
Custom Builder	Please see the Enterprise Configurator for configuration assistance at http://www.hp.com/products/configurator .	
HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21
Rack Options for Rack 5000 Series	Stabilizer Kit for 5642 rack (Graphite Carbon)	374493-B21
	NOTE: The stabilizing kit is used to prevent rack from tipping over.	
	Baying Kit for 5642 rack (Graphite Carbon)	374499-B21
	NOTE: The baying kit is used to join two or more HP 5642 racks.	
HP Rack 10000 Series (Graphite Metallic)	10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
	10642 (42U) Infrastructure Rack (High Voltage)	379005-001
	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22
	HP Rack 10842 (42U, 800mm wide) – Pallet	257415-B21
	HP Rack 10842 (42U, 800mm wide) – Shock Pallet	257415-B22
	HP Rack 10647 (47U) – Pallet	245160-B21
	HP Rack 10647 (47U) – Crated	245160-B23
	HP Rack 10642 (42U) – Pallet	245161-B21
	HP Rack 10642 (42U) – Shock Pallet	245161-B22
	HP Rack 10642 (42U) – Crated	245161-B23
	HP Rack 10636 (36U) – Pallet	245162-B21

Options

HP Rack 10636 (36U) – Shock Pallet	245162-B22
HP Rack 10636 (36U) – Crated	245162-B23
HP Rack 10622 (22U) – Pallet	245163-B21
HP Rack 10622 (22U) – Shock Pallet	245163-B22
HP Rack 10622 (22U) – Crated	245163-B23
HP Rack 10614 (14U) – Shock Pallet	292303-B22

NOTE: -B21 (pallet) used to ship empty racks shipped on a truck
-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels)
-B23 (crated) used for air shipments of empty racks

NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all HP equipment is qualified to be shipped in the Rack 10000 series

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:
http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.HTML (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML (North America)

NOTE: For additional information regarding Rack Cabinets, please see the following URL:
<http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

Rack Options for HP Rack 10000 Series

NOTE: For additional information regarding Rack Options, please see the following URL: <http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

HP Rack Light Kit (Neon)	361589-B21
HP Rack Plinth Kit (Carbon)	251960-B21
42U Side Panel – Graphite Metallic	246099-B21
36U Side Panel – Graphite Metallic	246102-B21
47U Side Panel – Graphite Metallic	255486-B21
TFT5600 Rack Keyboard Monitor	221546-xx1

Country Code Key (for TFT5600 Rack Keyboard Monitor (PN 221546-xx1))

XX = 001	US	XX = 091	Norway
XX = 031	UK	XX = 101	Sweden/Finland
XX = 041	Germany	XX = 111	Switzerland
XX = 051	France	XX = 131	Portugal
XX = 061	Italy	XX = 181	Belgium
XX = 071	Spain	XX = 291	Japan
XX = 081	Denmark	XX = B31	International

1U Rack Keyboard & Drawer (Carbon)	257054-xx1
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Country Code Key (for 1U Rack Keyboard & Drawer (PN 257054-xx1))



Options

XX = 001	US	XX = 091	Norway
XX = 031	UK	XX = 101	Sweden/Finland
XX = 041	Germany	XX = 111	Switzerland
XX = 051	France	XX = 131	Portugal
XX = 061	Italy	XX = 181	Belgium
XX = 071	Spain	XX = 291	Japan
XX = 081	Denmark	XX = B31	International

NOTE: For additional information regarding Rack Options, please see the following URL: <http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

HP KVM Switch Options

Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
IP Console Switch Box (KVM/IP), 1 x 1 x 16	262585-B21
IP Console Switch Box (KVM/IP), 3 x 1 x 16	262586-B21
HP 1x4 USB/PS2 KVM Switch, RM (ALL)	371302-B21
HP 1x4 USB/PS2 KVM Switch, TT, (EURO)	371301-A21
HP 1x4 USB/PS2 KVM Switch, TT (UK)	371301-031
HP 1x4 USB/PS2 KVM Switch, TT, (AUST/NZ)	371301-011
HP 1x4 USB/PS2 KVM Switch, TT, (NA/JPN)	371301-D71
PS/2 Interface Adapter, 8 pack	262587-B21
PS/2 Interface Adapter, 1 pack	262588-B21
CAT5 KVM Expansion Module	262589-B21
Serial Interface adapter - 1 Pack with power supply	373035-B21
CAT5e Cable 3', 4 pack	263474-B21
CAT5e Cable 6', 8 pack	263474-B22
CAT5e Cable 12', 8 pack	263474-B23
CAT5e Cable 20', 4 pack	263474-B24
CAT5e Cable 40', 1 pack	263474-B25

NOTE: For additional information regarding HP KVM Switches and options, please see the following URL: <http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/list.html#console>

Options

Service and Support Offerings (HP Care Pack Services)

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years	U4462A
Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	U4462E
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years	U4463A
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4463E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years	U4464A
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4464E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years	U4465A
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4465E

Installation & Start-up Services

Hardware Installation	U4473A
Hardware Installation, Electronic	U4473E
Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.	U4474A
Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4474E

Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays.	U4475A
Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4475E
Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays.	U4477A
Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4477E

Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays.	U4476A
Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4476E
Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays.	U4478A
Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4478E

NOTE: For more information, customer/resellers can contact
<http://www.hp.com/services/carepack>

Memory

HP ProLiant ML330 G3 Models

Standard Memory

256-MB (expandable to 4GB) of non-interleaved PC2100 DDR SDRAM running at 266MHz, with Advanced ECC capabilities (1 x 256MB)

Standard Memory Plus Optional Memory

Up to 3328-MB memory is available with the optional installation of PC2100 DDR SDRAM memory kits.

Standard Memory Replaced with Optional Memory

Up to 4096-MB memory is available with the removal of the standard 256-MB of memory and the optional installation of PC2100 DDR SDRAM DIMM memory kits.

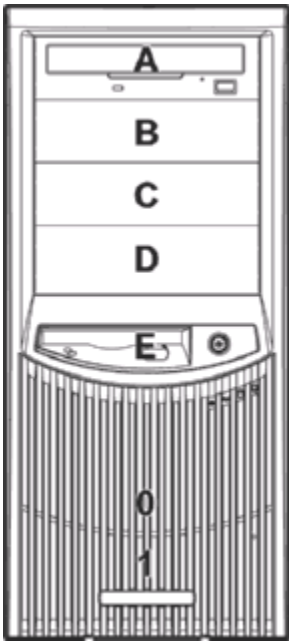
NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		1	2	3	4
Standard	256 MB	256 MB	Empty	Empty	Empty
Optional	3,328 MB	256 MB	1024 MB	1024 MB	1024 MB
Maximum	4,096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP:

- | | |
|---|------------|
| • 128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB) | 287494-B21 |
| • 256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB) | 287495-B21 |
| • 512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB) | 287496-B21 |
| • 1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) | 287497-B21 |

Storage



A	48x IDE (ATAPI) CD-ROM
E	1.44 MB Diskette Drive
B, C, D	Removable Media Bays (1.6" each)
0,1	Two 1" Non-Hot Plug Drive Bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	E	Integrated
IDE (ATAPI) CD-ROM Drive	Up to 2	A, B, C, or D	Integrated IDE (ATAPI)
DVD-ROM Drive Option Kit	Up to 2	A, B, C, or D	Integrated IDE (ATAPI)

Hard Drives

Hard Drives (SCSI Models only)

Ultra320 Hot Pluggable Drives (NOTE: For use with the ML3xx Two Bay Hot Plug SCSI Drive Cage PN 244059-B21 ONLY.)

	Quantity Supported	Position Supported	Controller
1-inch	Up to 2	A & B	Integrated Single Channel Wide Ultra3 SCSI Adapter in a PCI slot
300-GB 10,000 rpm	(With optional ML3xx Two Bay Hot Plug SCSI Drive Cage)		Smart Array 6402/128 Controller
146.8-GB 10,000 rpm			Smart Array 6404/256 Controller
72.8-GB 10,000 rpm			Smart Array 641 Controller
146.8-GB 15,000 rpm			Smart Array 642 Controller
72.8-GB 15,000 rpm			64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter
36.4-GB 15,000 rpm			
Ultra320 – Non-Hot Plug			
1-inch	Up to 5	0, 1, A, B, C, D	Integrated Single Channel Wide Ultra3 SCSI Adapter in a PCI slot
146.8-GB 10,000 rpm		(Using the A position requires the removal or re-	Smart Array 6402/128 Controller
72-GB 10,000 rpm			Smart Array 6404/256 Controller
36.4-GB 15,000 rpm			Smart Array 641 Controller
			Smart Array 642 Controller

Storage

positioning of 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter
CD-ROM)

NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.

Hard Drives (ATA Models only)

ATA/100 - Non-Hot Plug

1-inch	Up to 4	0, 1, A, B, C, D	Integrated Dual Channel Ultra ATA-100 Adapter with support for Integrated ATA RAID 0, 1, & 1+0 (ATA Models)
160.0-GB			
80.0-GB		(Using the A position requires the removal or re-positioning of CD-ROM)	
40.0-GB			

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 30 Family	Up to 13	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
Modular Smart Array 500 G2 System	1	External	Please see the Modular Smart Array 500 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Modular Smart Array 1000: http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML
(Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML
(North America)

Maximum Storage Capacity - ATA Models (SCSI Enclosure)

Internal	640.0 GB (4 x 160.0 GB) (ATA only)
External	29.400 TB (14 x 300 GB) x 7 (Requires additional SCSI controllers in slots)
Total	30.040 TB

Maximum Storage Capacity - SCSI Models (SCSI Enclosure) + Optional Hot Plug Drive Cage)

Internal	1040.4 GB ((3 x 146.8 GB non-hot-plug hard drives) + (2 x 300 GB hot plug hard drives))
External	29.400 TB (14 x 300 GB) x 7 (Requires additional SCSI controller in slots)
Total	30.218 TB

Tape Drives, Tape Autoloaders & Tape Libraries

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the



Storage

following:

http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html (North America)
<http://h18000.www1.hp.com/products/quickspecs/Division/10233.html> (Worldwide)

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders and Tape Libraries listed below, please see the following:

http://h18000.www1.hp.com/products/quickspecs/North_America/10809.html (North America)
<http://h18000.www1.hp.com/products/quickspecs/Division/10809.html> (Worldwide)

NOTE: For complete listing of tape drive offerings see

<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

	Quantity	Position Supported	Controller
HP StorageWorks Tape Drives, Internal, Hot Plug DAT 72 Tape Drive DAT 40 Tape Drive (NOTE: For use with the ML3xx Two Bay Hot Plug SCSI Drive Cage (PN 244059-B21) ONLY.)	Up to 2 (With optional ML3xx Two Bay Hot Plug SCSI Drive Cage)	A & B	Smart Array 5i Controller (integrated on system board) Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller Smart Array 641 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Drives, Internal DAT 72 Tape Drive DAT 40 Tape Drive DAT 24 Tape Drive DLT VS80 Tape Drive DLT VS160 Tape Drive SDLT 320 Tape Drive	Up to 2	B, C, D	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Drives, External Ultrium 215 Ultrium 230 Ultrium 448 Ultrium 460 DAT 72 Tape Drive DAT 40 Tape Drive DAT 24 Tape Drive DLT VS80 Tape Drive DLT VS160 Tape Drive SDLT 320 Tape Drive	Up to 2	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Drives, External Ultrium 960	1	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Autoloaders, External DAT 72x6 Tape Autoloader 1/8 Tape Autoloader SSL1016 Tape Autoloader	1 autoloader per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape	Please	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter



Storage

Libraries, External MSL6000 (Ultrium 960-based) MSL6000 (SDLT 600-based) MSL6000 (Ultrium 460-based) MSL5026S2 (SDLT 320-based) MSL5052S2 (SDLT 320-based)	reference the MSL Tape Library QuickSpecs to determine configuration requirements		64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Rack-mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit 5U Rack-Mount Kit	1 per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks ESL E-Series Tape Libraries ESL 712e ESL 630e ESL 322e ESL 286	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

Power Specifications

Part Number	319640-001
Spare Kit	324714-001
Operational Input Voltage Range (Vrms)	90-264
Frequency Range (Nominal) (Hz)	47 - 63 (50 / 60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	300	300	300	300	300	300
Nominal Input Current (Arms)	4.6	3.9	2.1	2.0	1.9	1.8
Max Rated Input Wattage Rating (Watts)	435	429	423	423	417	411
Max. Rated VA (Volt-Amp)	458	451	445	445	439	433
Efficiency (%)	69	70	71	71	72	73
Power Factor	0.95					
Leakage Current (mA)	0.70	0.81	1.47	1.55	1.62	1.69
Maximum Inrush Current (A peak)	42	48	81	92	96	100
Maximum Inrush Current duration (mS)	2					

System Specifications

	Processor	Memory	HDD	PCI	PS	
HP ProLiant ML330 G3 Fully Configured	2	4	5	4	1	
Fully Loaded System Input Wattage (W)	425	419	413	413	408	402
Fully Loaded System Input Current (Arms)	4.5	3.8	2.1	2.0	1.9	1.8
Fully Loaded System Thermal (BTU-Hr)	1450	1429	1409	1409	1390	1371
Fully Loaded System VA (Volt-Amp)	448	441	435	435	429	423
System Leakage with all power supplies loaded (mA)	0.70	0.81	1.47	1.55	1.62	1.69
System Inrush Current with all power supplies loaded (A)	42	48	87	92	96	100
Power cord requirements	Nema 5-15P to IEC320-C13			Option no./Spare no: 227099-001/187335-001		
	IEC320-C13 to IEC320-C14			Option no./Spare no: 142257-001/142258-B21		

Example of real input watts consumed versus rated watts consumed is available via the online tool located at url: <http://inline.compaq.com/pg/ecg/issd/power/psupply.asp>
select system calculator for one of the systems and reference the green fields at the bottom of the calculator.

NOTES:

* To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: <http://h30099.www3.hp.com/configurator/powercalcs.asp>.

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: ML330 G3
- Click on: "Power Calculator" link (You may need to scroll down to see it.)

Power Specifications

Server Power Cords One 12 Ft. lowline power cord ships standard.	
12 ft. Power Cords (13 Cord Sets)	Power Cord Part Number
Country	
APD	139867-006
APD	100613-003
APD	100614-003
Australia	100611-007
Europe	100614-003
France	100614-003
Germany	100614-003
Japan	139867-006
PRC	139867-006
PRC	100613-003
PRC	100661-007
UK	100613-003
US	163719-002

Technical Specifications

System Unit	Dimensions (HxWxD) (with feet)	16.8 x 7.5 x 20.25 in (41.91 x 19.05 x 51.44 cm)	
	Weight	40 lb (18.18 kg)	
	Input Requirements (per power supply)	Range Input Voltage	100 to 199 VAC/200 to 240 VAC
		Normal Line Voltage	115 to 230 VAC
	Line Frequency	50 to 60 Hz	
	Rated Input Current	<6A 100VAC to 199VAC	
		<3A 200VAC to 240VAC	
	BTU Rating	1,560 BTU	
	SCSI Connectors	One internal HD68 connectors	
		NOTE: Support for either one internal, or one external is available. Internal cabling is included with the server. External SCSI cabling from the integrated SCSI controller is achieved using an internal to external SCSI cable option kit (PN 159547-B22 or 333370-B21).	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	300W
		Maximum Peak Power	400W
	Temperature Range	Operating	50° to 93° F (10° to 35° C)
Shipping		-40° to 150° F (-40° to 66° C)	
Relative Humidity (non-condensing)	Operating	20% to 80%	
	Non-operating	5% to 90%	
Acoustic Noise	Idle (Fixed Disk Drives Spinning)		
	L WAd (BELS)	5.1	
	L pAm (dBA)	34	
	Operating (Random Seeks to Fixed Disks)		
	L WAd (BELS)	5.5	
	L pAm (dBA)	38	

48X Max IDE CD-ROM Drive	Disk	Applicable Disk	CD-ROM (modes 1 and 2); mixed mode (audio and data combined) CD-DA Photo CD (Single- and Multi-session) CD-XA (mode 2, forms 1 and 2) CDI ready ; CD-WO
		Capacity	650 MB
	Block Size	Mode 1	2,048 bytes, 1024 bytes
		Mode 2	2,340 bytes, 2,336 bytes, 1024 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
		Interface	IDE (ATAPI)
	Access Times (typical)	Random	<100 ms
		Full-Stroke	<150 ms
	Audio Output Level	Line-Out	0.7 VRMS at 47 kOhms

Technical Specifications

	Data Transfer Rate	Sustained	150 KB/s (single), 1,500 to 7,200 KBps (10x to 48x)
		Burst	150 KB/s to 7,200 KB/s
	Cache Buffer	128 KB	
	Start-up Time (typical)	<7seconds	
	Stop Time	<4seconds	
	Laser Parameters	Type	Semiconductor Laser GaA1As
		Wave Length	780 ± 25 nm
	Operating Conditions	Temperature	41° to 113° F (5° to 45° C)
		Humidity	10% to 80%
	Dimensions	(HxWxD, maximum)	1.7 x 5.85 x 8.11 in (42.9 x 150 x 208 cm)
Weight		2.09 lb (0.95 kg)	
<hr/>			
NC7760 PCI Gigabit Server Adapter (embedded)	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX	
		IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	32-bit bus-master PCI	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)
	<hr/>		
Integrated Single Channel Wide Ultra3 SCSI Adapter in PCI Slot 1	Drives Supported	Up to 14 SCSI devices Wide Ultra320, Wide Ultra3 and Wide Ultra2 SCSI hard drives	
	Data Transfer Method	64-bit/33-MHz PCI bus-master	
	SCSI Channel Transfer Rate	160 MB/s per channel	
	Maximum Transfer Rate per PCI Bus (peak)	267 MB/s per channel	
	SCSI Protocols	Wide Ultra 3 SCSI and Wide Ultra2 SCSI	
	Electrical Protocol	Low Voltage Differential (LVD)	
	SCSI Termination	Active Termination	
	External SCSI Connectors	External SCSI cabling from the integrated SCSI controller is achieved using an internal to external SCSI cable option kit (PN 159547-B22 or 333370-B21).	
	Internal SCSI Connectors	One 68-Pin Wide Ultra SCSI-3 connectors	

Technical Specifications

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